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EXAMINER	
HUISMAN, DAVID J	

ART UNIT	PAPER NUMBER
2183	

MAIL DATE	DELIVERY MODE
07/23/2007	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	09/941,142	WAH CHAN ET AL.	
	Examiner	Art Unit	
	David J. Huisman	2183	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *29 September 2005*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *21-58* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *21-58* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☒ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *28 August 2001* is/are: a)☐ accepted or b)☒ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date *9/29/2005*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

1. Claims 21-58 have been examined.

Papers Submitted

2. It is hereby acknowledged that the following papers have been received and placed of record in the file: Letter Requesting Suspension of Prosecution, IDS, RCE, Amendment, and Extension of Time as received on 9/29/2005, Power of Attorney as received on 2/17/2006 and 11/22/2006, and Request for Status of Application as received on 3/23/2007.

Specification

3. The title of the invention is not descriptive. A new title is required that is clearly indicative of the invention to which the claims are directed.

Drawings

4. The drawings are objected to under 37 CFR 1.83(a). The drawings must show every feature of the invention specified in the claims. Therefore, speculatively locking a resource prior to hazard determination between portions of two instructions must be shown or the feature(s) canceled from the claim(s). Similarly, speculatively dispatching a load to a cache prior to RAW hazard determination and handling data from the cache based on the determination must be shown or canceled. No new matter should be entered.

Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing

sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as "amended." If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Claim Rejections - 35 USC § 112

5. The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

6. Claims 21-31 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

7. Claim 21 recites the limitation "the accessing portion" in line 4. There is insufficient antecedent basis for this limitation in the claim. For purposes of examination, the examiner will interpret "the accessing portion" as "an accessing portion".

8. Claim 29 recites the limitation "the computer instruction" in line 3. There is insufficient antecedent basis for this limitation in the claim. For purposes of examination, the examiner will interpret "the computer instruction" as "a computer instruction".

9. Claims 22-31 are rejected under 35 U.S.C 112, 2nd paragraph, for being indefinite, because they are dependent, either directly or indirectly, on an indefinite claim.

Claim Rejections - 35 USC § 102

10. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

11. Claims 21-56 and 58 are rejected under 35 U.S.C. 102(b) as being anticipated by Barlow U.S. Patent Number 5,168,564 (herein referred to as Barlow).

12. Referring to claims 21, 32, and 45 Barlow has taught a method comprising; speculatively locking a resource to be accessed by execution of a first instruction, wherein the locking is performed prior to determining whether a hazard exists between the accessing portion of the first instruction and à portion of a second instruction based, at least in part, on order of the first instruction with respect to the second instruction. See Barlow, column 1, lines 50-61, and column 2, lines 40-64; note that the locking is speculative because the system speculates that a hazard will exist among first and second RMW operations in the future, and therefore, it must lock the resource speculatively (ahead of time) in order to fix any hazard associated with the second instruction's access/execution following the first instruction's access of data. It may

turnout, however, that the locking has nothing to do with a hazard, but instead, with fixing a malfunctioning lock mechanism, which is done by locking a resource and then canceling read/write processing associated with that resource. See column 2, line 65, to column 3, line 5.

13. Referring to claims 22, 34, and 46 Barlow has taught wherein the locking is performed prior to the first instruction entering a trap stage of an instruction pipeline (Barlow column 7 line 60-column 8 line 3, figure 4a, column 5 lines 9-18; the fault, which is the same thing as a trap, or exception, causes the cancel command, but this is after the lock has already occurred). It should be realized that a trap stage could be any point within the processing of the instruction in which a fault is fixed. Clearly, if a resource is already locked, and it needs to be unlocked (column 9, lines 35-36), then the locking is performed before the error is fixed in a "trap stage".

14. Referring to claims 23, 35 and 47 Barlow has taught wherein the first instruction is an atomic instruction including a portion to lock the resource and a portion to unlock the resource (Barlow column 1 lines 50-61, and column 8, lines 4-6; the resource is locked at the read portion and reset after the write portion of the operation).

15. Referring to claims 24, 36, and 48 Barlow has taught wherein the hazard includes a read-after-write hazard (Barlow column 1 lines 43-61; the resource is locked at the read portion and reset at the write portion of the operation). This prevents read-after-write hazards (RAW hazards) because a first operation will be able to write a result to a resource before a subsequent operation reads from it (thereby preventing the subsequent instruction from reading incorrect data).

16. Referring to claims 25, 37, and 49 Barlow has taught wherein the locking includes: locking the resource during an effective address calculation stage of an instruction pipeline

(Barlow column 4 lines 35-51, column 5 lines 9-19). Clearly, before a resource is locked, its location must be determined.

17. Referring to claims 26, 38, and 50 Barlow has taught wherein the locking includes locking at least a portion of a cache (Barlow column 5 lines 26-40, column 9 line 53-column 10 line 16).

18. Referring to claims 27, 39, and 51 Barlow has taught wherein the locking includes locking at least one memory address (Barlow column 5 lines 26-40, column 9 line 53-column 10 line 16; every entry in the cache is a memory address).

19. Referring to claims 28, 40, and 52 Barlow has taught further comprising unlocking the resource no later than a time at which the first instruction exits an instruction pipeline, regardless of whether the first instruction is cancelled (Barlow column 1 lines 50-61; the resource is locked at the read portion and reset after the write portion of the operation – after the write portion of the operation, the process is complete and therefore leave the pipeline). Clearly, when an instruction leaves the pipeline, all processing corresponding to that instruction will have been finished. Therefore, if an instruction specifies unlocking, then unlocking will have to occur before the instruction leaves the pipeline (completes).

20. Referring to claims 29 and 53 Barlow has taught wherein unlocking the resource includes:

unlocking the resource in the normal course of executing the computer instruction (Barlow column 1 lines 50-61; the resource is locked at the read portion and reset after the write portion of the operation – after the write portion of the operation, the process is complete and therefore leave the pipeline).

21. Referring to claims 30, 41, and 54 Barlow has taught wherein unlocking the resource includes preventing a write portion of the first instruction from altering information held in at least a portion of the resource (Barlow column 2 lines 40-64 – the other resources are not affected).

22. Referring to claims 31 and 55 Barlow has taught wherein preventing a write portion from altering information includes suppressing writing a value to an architectural storage location (Barlow column 2 lines 40-64; since the operation is being canceled, there will be no write-back to the registers).

23. Referring to claim 33 Barlow has taught further comprising a plurality of processing cores, wherein respective processing cores are adapted to lock the resource in response to respective accesses by respective first instructions prior to determining whether a hazard exists between the respective accesses and the second instruction (Barlow column 9 lines 3-26; multiple cores have access to the same resource).

24. Referring to claim 42 Barlow has taught a processor adapted to:

a) speculatively dispatch a load operation to a cache unit prior to determining whether read-after-write hazards associated with the load operation are present (Barlow column 1 lines 50-61, column 2 lines 40-64; the lock indicator, or mechanism, can be canceled after being set once it is determined that the command using the resource that is locked is invalid, therefore the resource is being locked before the command has been determined to have hazards, and before the command is known to go until completion, which goes along with the definition of prior to a determination of a hazard in the instant application at page 2 line 23-page 3 line 4 – the first portion of a read modify write is a read from memory, which is a load instruction).

b) handle a datum from the cache unit for the speculatively dispatched load operation based, at least in part, on the determining. For a subsequent instruction seeking to access the same data as the load instruction, the data can be handled in one of two ways. If a hazard exists, then that data is not made available to the second instruction until the first read-modify-write (RMW) instruction (which includes the load) is finished with it. If there is no hazard (i.e., the second instruction does not need to use the data while the first RMW is operating on it), then the data will be made available to the second instruction.

25. Referring to claim 43 Barlow has taught the processor of claim 42 wherein the processor is adapted to lock a resource associated with the load operation concurrently with dispatching the load operation (Barlow column 1 lines 50-61, column 2 lines 40-64; the lock indicator, or mechanism can be canceled after it is set once it is determined that the command using the resource that is locked is invalid, therefore the resource is being locked before the command has been determined to have hazards, and before the command is known to go until completion, which goes along with the definition of prior to a determination of a hazard in the instant application at page 2 line 23-page 3 line 4 – the first portion of a read modify write is a read from memory, which is the same as a load type instruction – the resource is locked during the read portion).

26. Referring to claim 44 Barlow has taught the processor of claim 43 wherein the processor is further adapted to unlock the resource associated with the load operation no later than a time at which an instruction implementing the load operation exits an instruction pipeline, regardless of whether the instruction is cancelled before exiting the instruction pipeline (Barlow column 1 lines 50-61; the resource is locked at the read portion and reset after the write portion of the

operation – after the write portion of the operation, the process is complete and therefore leave the pipeline).

27. Referring to claim 56, Barlow has taught a method of speculatively locking a resource, the method comprising:

a) dispatching for execution a load operation prior to determining whether a hazard exists between the load operation and a store operation indicated in a buffer. See column 1 lines 50-61, column 2 lines 40-64; the lock indicator, or mechanism, can be canceled after being set once it is determined that the command using the resource that is locked is invalid, therefore the resource is being locked before the command has been determined to have hazards, and before the command is known to go until completion, which goes along with the definition of prior to a determination of a hazard in the instant application at page 2 line 23-page 3 line 4. In order to detect a hazard between two instructions, a first instruction must be dispatched and executed. The first RMW instruction includes a load, (i.e., read). The second instruction includes a store (i.e., a write). So, in order to determine if the second RMW conflicts with the first, the first must be dispatched. Also, instructions are inherently stored in some buffer before dispatch.

b) locking a resource of the load operation incident with execution of the load operation. See column 1, lines 50-61, and column 2, lines 40-64.

c) determining whether the hazard exists and handling a datum returned for the load operation based, at least in part, on the determining. For a subsequent instruction seeking to access the same data as the load instruction, the data can be handled in one of two ways. If a hazard exists, then that data is not made available to the second instruction until the first read-modify-write (RMW) instruction (which includes the load) is finished with it. If there is no hazard (i.e., the

second instruction does not need to use the data while the first RMW is operating on it), then the data will be made available to the second RMW.

28. Referring to claim 58, Barlow has taught a method as described in claim 56. Barlow has further taught unlocking the resource after the datum is returned. See column 1, lines 53-57. After the datum is modified and returned to the cache, the lock is reset (unlocked).

29. Claims 42 and 56-58 are rejected under 35 U.S.C. 102(b) as being anticipated by Konigsfield et al., U.S. Patent No. 5,420,991 (herein referred to as Konigsfield).

30. Referring to claim 42, Konigsfield has taught a processor adapted to:

a) speculatively dispatch a load operation to a cache unit prior to determining whether read-after-write hazards associated with the load operation are present. See the abstract. Note that a load, which occurs after a store, when speculatively executed past the store, causes a RAW hazard which is ultimately detected.

b) handle a datum from the cache unit for the speculatively dispatched load operation based, at least in part, on the determining. See the abstract and column 8, lines 4-16, and note that when a conflicting store is encountered (hazard occurs), the load has improperly executed, and consequently, the load is canceled (and the data it loaded is discarded). If a hazard does not exist, then the data was properly loaded and may be used by a subsequent instruction.

31. Referring to claim 56, Konigsfield has taught a method of speculatively locking a resource, the method comprising:

a) dispatching for execution a load operation prior to determining whether a hazard exists between the load operation and a store operation indicated in a buffer. See the abstract.

b) locking a resource of the load operation incident with execution of the load operation. See column 6, line 66, to column 7, line24, and column 8, lines 4-16. And note that a resource is locked, where the resource is related to execution of a load.

c) determining whether the hazard exists and handling a datum returned for the load operation based, at least in part, on the determining. See the abstract and column 8, lines 4-16, and note that when a conflicting store is encountered (hazard occurs), the load has improperly executed, and consequently, the load is canceled (and the data it loaded is discarded). If a hazard does not exist, then the data was properly loaded and may be used by a subsequent instruction.

32. Referring to claim 57, Konigsfield has taught a method as described in claim 57. Konigsfield has further taught discarding the datum if it is determined the hazard exists. See the abstract and column 8, lines 4-16.

33. Referring to claim 58, Konigsfield has taught a method as described in claim 56. Konigsfield has further taught unlocking the resource after the datum is returned. See column 7, lines 4-7, and note that the resource is locked when instruction W2 is performed. Column 8, lines 4-16 shows an example where W2 is performed after R2, which is the instruction that returns the data (loads it). Consequently, unlocking occurs after returning data.

Claim Rejections - 35 USC § 102

34. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an

> international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

35. Claims 21-22, 25-27, 29, 32-34, 37-39, 45-46, and 49-51 rejected under 35 U.S.C. 102(e) as being anticipated by Razdan et al., U.S. Patent No. 6,141,734 (herein referred to as Razdan).

36. Referring to claims 21, 32, and 45, Razdan has taught a method comprising; speculatively locking a resource to be accessed by execution of a first instruction, wherein the locking is performed prior to determining whether a hazard exists between the accessing portion of the first instruction and a portion of a second instruction based, at least in part, on order of the first instruction with respect to the second instruction. See the abstract and column 2, line 27, to column 3, line 23. Essentially, a load-lock instruction will load a data item in the cache. If the load-lock instruction had been executed speculatively such that it executed before an older load, then that older load would evict at least some of the contents of the cache including those loaded by the load-lock instruction, thereby causing cache corruption and the subsequent store-conditional instruction to be accessing the wrong data (hazard).

37. Referring to claims 22, 34, and 46, Razdan has taught wherein the locking is performed prior to the first instruction entering a trap stage of an instruction pipeline. See column 5, lines 59-64. A trap stage is used to signal replay of the load-lock. Clearly, a replay occurs after the load-lock has already been performed. And, a load-lock causes locking.

38. Referring to claims 25, 37, and 49, Razdan has taught wherein the locking includes: locking the resource during an effective address calculation stage of an instruction pipeline. Since a load requires address calculation, it address calculation stage is simply a name for a stage, it can be said that the locking occurs during such a stage.

39. Referring to claims 26, 38, and 50, Razdan has taught wherein the locking includes locking at least a portion of a cache. See Fig.2, component 16, and Fig.3.

40. Referring to claims 27, 39, and 51, Razdan has taught wherein the locking includes locking at least one memory address. See Fig.2, component 16, and Fig.3.

41. Referring to claim 29, Razdan has taught wherein unlocking the resource includes unlocking the resource in the normal course of executing a computer instruction. After the store-conditional executes, the data is considered unlocked.

42. Referring to claim 33 Razdan has taught further comprising a plurality of processing cores, wherein respective processing cores are adapted to lock the resource in response to respective accesses by respective first instructions prior to determining whether a hazard exists between the respective accesses and the second instruction. See Fig.2, components 12-1 to 12-m. and the abstract, and column 2, line 27, to column 3, line 23.

Response to Arguments

43. Applicant's arguments filed on September 29, 2005, have been fully considered but they are not persuasive.

44. Applicant argues the novelty/rejection of at least claim 21 on pages 7-8 of the remarks, in substance that:

> "It should be clear to the Examiner that Barlow fails to disclose or suggest determining whether a hazard exists between instructions. As stated by the Examiner, hazards may or may not exist. Applicant requests that the Examiner indicate where Barlow discloses or suggests determining whether a hazard exists based on order of instructions as asserted by the Examiner."

45. These arguments are not found persuasive for the following reasons:

a) As previously stated, applicant should see column 1, lines 38-61, of Barlow. Barlow's disclosure is related to the avoidance of two hazards. A first is a structural hazard in which two different instructions want to use the same resource at the same time but cannot. A second hazard is a RAW hazard where the second instruction wants to access data that is not yet written by a first instruction. This is the whole reason for the first instruction to lock the resource.

46. Applicant argues the novelty/rejection of at least claims 42 and 25 on pages 8-9 of the remarks, in substance that:

> "The Examiner ignored the arguments for independent claim 42 submitted in the previous response. The advisory action only addresses claims 21, 32, and 45."
>
> "The examiner ignored arguments presented for claims 25, 37, and 49 in the previous reply."

47. These arguments are not found persuasive for the following reasons:

a) The examiner gave a cursory review of the after-final amendment. As described in MPEP 714.13, after-final amendment entry is not a matter of right. "Except where an amendment merely cancels claims, adopts examiner suggestions, removes issues for appeal, or in some other way requires only a cursory review by the examiner, compliance with the requirement of a showing under 37 CFR 1.116(b)(3) is expected in all amendments after final rejection." Responding to every argument, much like the examiner would do in response to an amendment after a non-final Office Action, does not constitute a cursory review. Such a response would be a full review, and applicant should not expect such a review after final rejection. In addition, for the reasons set forth above in the rejection of claim 42, the examiner feels that Barlow reads on the claim.

48. Applicant argues the novelty/rejection of at least claims 22 and 25 on pages 8-9 of the remarks, in substance that:

> "...Hence, the Examiner rejects these claims based on an assertion that a limitation of a trap stage means nothing to the Examiner. With this assertion, the Examiner effectively rewrites the claims. Applicant requests that the Examiner examine the pending claims as they are written, and that the Examiner either identify the section of Barlow that supports the assertion that a trap stage is at any time or identify the section of Barlow that discloses or suggests locking a resource prior to a first instruction entering a trap stage of a pipeline."
>
> "...Since the Examiner cannot find support to reject the claims, the Examiner relies on an assertion of inherency. The Examiner states that locking must be performed during an effective address calculation stage. Applicant requests identification of the section of Barlow that discloses impossibility of locking subsequent to an effective address calculation stage, and the necessity of locking a resource during its effective address calculation stage."

49. These arguments are not found persuasive for the following reasons:

a) Regarding the first argument, it is not clear how applicant comes to such a conclusion. As described in the rejection, a trap stage is interpreted as a stage in which an error may be fixed. Note that a "trap" stage is merely a stage named, or labeled, "trap", where trap provides no functional meaning in the claim. Hence, since Barlow fixes a malfunctioning lock, it can be said that it is fixed in a trap stage.

b) Regarding the second argument, a similar response applies. Again, applicant is merely labeling a stage. The stage is not described in any way as to what happens in the stage or what doesn't happen in the stage. As the examiner stated, with a load instruction, an address must be calculated. Therefore, there must be an "effective address calculation" stage. Since a resource associated with that address is locked by the load, it can also be said that the locking occurs in applicant's labeled stage. Applicant's use of the word "comprising" allows this stage to include anything and still anticipate the claim. Consequently, address calculation and locking in Barlow occur in the same stage.

50. Applicant argues the novelty/rejection of at least claim 28 on pages 9-10 of the remarks, in substance that:

> "Barlow does not disclose or suggest "unlocking the resource no later than a time at which the first instruction exits an instruction pipeline, regardless of whether the first instruction is cancelled" as recited in claim 28, and similarly in claims 40, 44, and 52. Again, the Examiner asserts that these limitations are inherent. The Examiner states that "if an instruction specifies unlocking, then unlocking is part of processing the instruction, and therefore, the unlocking will have to occur before the instruction leaves the pipeline (completes) ." The Examiner has again examined only a portion of the claim limitations. The Examiner fails to address the entire claim, which includes recitation of regardless of whether the first instruction is cancelled." Barlow fails to disclose or suggest the limitations of the claims, and the Applicant requests that the Examiner identify the section of Barlow that discloses or suggests the claims in their entirety and not just limitations selected by the Examiner."

51. These arguments are not found persuasive for the following reasons:

a) The examiner asserts that if the instruction is not canceled, then the unlocking will occur as described in the rejection. Furthermore, one of ordinary skill in the art would recognize that if the instruction were to be canceled, and unlocking does not occur, then no subsequent instruction would be able to access the locked data. Consequently, if the instruction is canceled, so too must the lock, so that additional instructions are able to access the data that was locked.

52. Applicant argues the novelty/rejection of claim 43 on page 10 of the remarks, in substance that:

> "Claim 43 recites "wherein the processor is adapted to lock a resource associated with the load operation concurrently with dispatching the load operation." The rejection of claim 43 relies on the rationale that a "lock indicator, or mechanism can be canceled after it is set once it is determined that the command using the resource that is locked is invalid, therefore the resource is being locked before the command has been determined to have hazards, and before the command is known to go until completion." Applicant cannot determine how this assertion by the Examiner relates to claim 43, since there are no assertions as to concurrency of locking and dispatch. Barlow does not disclose or suggest locking a resource to be accessed by a load operation concurrently with dispatch of the load operation. Moreover, the Examiner fails to address these limitations."

53. These arguments are not found persuasive for the following reasons:

a) Barlow, in column 1, explains that during the read/load, the data location is locked. Hence, when dispatched (sent for execution), the resource is locked so that no other item can update the location when it is being read. See Fig.4a and note that the lock is set at the beginning of processing when the load is dispatched. It doesn't wait until the read actually occurs. It happens before the load executes and inherently after it is fetched. The stage between can be considered dispatch.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to David J. Huisman whose telephone number is (571) 272-4168. The examiner can normally be reached on Monday-Friday (8:00-4:30).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Eddie Chan can be reached on (571) 272-4162. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

DJH
David J. Huisman
July 5, 2007